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The Mineral Industry of Guinea

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The Mineral Industry of Guinea

By Michael D. Fenton[1]

The Republic of Guinea continued to effect changes in economic and administrative policy that eventually would decrease the role of the Government in the economy and develop the country's mineral and agricultural potential. Toward these ends, the Government reformed the country's monetary and banking system and promulgated new petroleum, mining, commercial, and investment codes to attract foreign investment in, among others, the mining industry. There is long-term potential for investment in the mining sector, primarily in gold and diamonds.

In early 1987, foreign donors agreed to provide the $670 million requested by the Government for its recently drafted 1987-88 public investment program and $200 million in balance of payments support for 1988-89, made necessary by the sharp fall in bauxite prices. The donors included the African Development Bank, the Islamic Development Bank, the International Monetary Fund, the International Bank for Reconstruction and Development (World Bank), Canada, France, the Federal Republic of Germany, Italy, Japan, Saudi Arabia, Switzerland, and the United States. The main priority was to develop basic infrastructure, especially roads, while mining, industry, energy, and water sectors would receive the remaining 18.7% of the funds.

The Government planned to reduce its dependence on bauxite revenues by diversifying into diamond, gold, and iron ore mining. At present, Guinea depends on bauxite and alumina for 80% to 90% of its export revenues. As a proportion of the value of total exports, bauxite exports were forecast to fall from 87% to 63%, while gold exports would increase eightfold to nearly $100 million, and diamond exports would increase by 33% to $48 million. The Government made little progress toward the development of the rich Nimba iron ore deposits on the Guinean side of the Liberian border at Mount Nimba.

PRODUCTION AND TRADE

Guinea had the world's largest bauxite reserves, amounting to 5.9 billion tons or one-quarter of the world total, and it was the world's second largest exporter of bauxite after Australia. Total production was an estimated 14.2 million tons. The amounts of metallurgical-grade and calcined bauxite shipped were about 11.4 million tons and 138,000 tons, respectively. Guinea remained extremely dependent on mining exports for Government revenue and for foreign exchange earnings.

Compagnie des Bauxites de Guinée (CBG) produced 9.7 million tons of bauxite from its Sangaredi Mine during 1987, its 15th year of production. Of this total, 120,000 tons was calcined. CBG production was sold to European and North American shareholders in Pittsburgh-based Halco Mining Inc. The decline in growth in aluminum consumption and the resulting decline in demand and price for bauxite brought about a renegotiation of the CBG export agreement. Since CBG provided nearly two-thirds of Government revenue and about 60% of export earnings, the depressed world market for bauxite had a serious impact on the Guinean economy.

Two other bauxite mines, at Kindia and Fria, produced about 4.5 million tons. About 90% of Kindia bauxite was exported to the U.S.S.R. for debt repayment, while the remainder went to Eastern Europe. Alumina production from Fria, nearly 543,000 tons, was exported to Canada and Western Europe.

Diamond production at the Aredor diamond mine fell 14% from 203,795 carats in 1986 to 174,916 carats in 1987. Nevertheless, the mine may be the world's richest in terms of average price per carat received for its production, of which 93% is gem quality. The average stone size also has been exceptionally high. In January 1987, a 100.3 carat diamond was mined and later sold for a record-high price of $1.56 million. An even larger 143-carat gem was found, which was sold in October for $3.65 million in an Antwerp auction. Total revenues for 1987 were an estimated $60 million.[3]

Gold was mined by artisans on a small scale and sold clandestinely. The Central Bank of Guinea authorized commercial banks to purchase gold on its behalf from anonymous sellers. Other than this unreported production, which was not well known, the Aredor diamond mine produced 2,380 troy ounces of byproduct gold in 1987.

Table 1.—Guinea: Production of mineral commodities[1]

(Thousand metric tons unless otherwise specified)

Commodity[2]		1983	1984	1985	1986	1987
Aluminum:						
Bauxite:						
Mine production:						
Wet basis	thousand tons	12,421	14,156	13,100	14,423	14,400
Dry basis	do.	11,600	12,740	11,790	13,000	13,500
Shipments (dry basis):						
Metallurgical-grade bauxite	do.	r10,380	11,810	11,084	11,469	11,500
Calcined bauxite	do.	100	120	100	122	e188
Alumina:						
Production	do.	r573	578	572	556	556
Shipments	do.	r573	578	572	556	556
Diamond:						
Gem	thousand carats	e23	44	123	190	e163
Industrial	do.	e17	3	9	14	e12
Total	do.	e40	47	132	204	e175

eEstimated. rRevised.

[1]Includes data available through July 7, 1988.

[2]In addition to the commodities listed, modest quantities of unlisted varieties of crude construction materials (clays, sand and gravel, and stone) presumably are produced, but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

[3]Reported figure.

COMMODITY REVIEW

METALS

Bauxite and Alumina.—Negotiations between the Government and Halco on pricing and on the export levy on bauxite from the Sangaredi Mine of CBG led to the finalization of a draft agreement in mid-1987 to be effective at the beginning of 1988. The $13 per ton export levy was abolished in favor of a floating levy that would reflect world price movements, and the Government's 65% share of the profits from CBG was increased to an unspecified figure. After 1987, Government revenues from CBG could drop by as much as one-third from the guaranteed level of $150 million. Fortunately, the world aluminum market improved over the year, and progress continued toward expansion of production by the development of a mine opposite Sangaredi Mine across the Pora River at Bidi Koum.

The depressed aluminum market was disadvantageous to shareholders of the Fria bauxite mine, who were paying $175 per ton base price, subject to fuel, soda, and other costs, through 1987. The company had been losing income in the depressed market since 1984, and the Government was not getting the expected revenue from sales and the additional $12.75 per ton export tax. Deficits were about $5 million to $8 million per year through 1985 and 1986. The contract with the Government expired in 1987 and negotiations were progressing to change the purchase contract to make the mine's bauxite more competitive on the world market.

Bauxite from the third bauxite mine in Guinea, operated by Office des Bauxites de Kindia, continued to export primarily to the U.S.S.R. under a barter contract to service

the Government's debt to the Soviet Union. This contract with the Soviets was due to be renegotiated with the objective of obtaining better value of goods in exchange for the bauxite. The Government also wanted to increase its participation in the mining and marketing of bauxite.

Gold.—Société Auriferè de Guinée (SAG) planned to begin in October 1988 the mining of 95%-fine alluvial gold from the Koron deposit, and later the Didi deposit, within its 850-square-kilometer concession in the Siguiri District of northeastern Guinea. SAG was owned 51% by Chevaning Mining and Exploration Co. Ltd. (CMC) of the United Kingdom and 49% by the Government. CMC in turn was owned 50.1% by Union Minière S.A. of Belgium and 49.9% by Omnium de Participations Mobilieres S.A., a private Swiss company involved in investment and financial services. The ore reserve at Koron was increased from 4 to 5.65 million cubic meters of gravel at an average grade of 0.08 troy ounce per cubic meter. The reserve at Didi was decreased from 3.5 to 2.63 million cubic meters at an average grade of 0.04 troy ounce per cubic meter.

Gold had been mined by independent native Guineans for many years from a laterite-covered layer of unconsolidated alluvial gravel, but large-scale mechanized mining was earlier thought to be potentially too difficult and costly. Two of the ten known deposits that would be mined first are in a 2-meter-thick gravel zone covered by 8 meters of overburden. The gold extraction plant would have the capacity to process about 2,500 cubic meters per day of gold-bearing gravel. Gold production during a 9-year period would be between 36,000 and 105,000 ounces per year, depending on the area mined, and the average operating cost would be an estimated $4.65 per cubic meter of gravel.

The owner of the Aredor diamond mine, Société Mixte Aredor-Guinea S.A., completed 1 month ahead of schedule the installation of a gold recovery plant to treat discarded material less than 2 millimeters in size at the gravel treatment plant. The plant contained five Knelson concentrators to recover gold down to about 10-micrometer size. The capital cost for the plant was about $400,000, which would be recovered within 3 months of operation. Production was to be 10,000 ounces per year beginning in September, and production during the last quarter of 1987 was 77 ounces of gold. Recovery was low because of problems with equipment and was expected to be erratic because the mining path was designed to follow diamond mineralization.

Gold exploration was scheduled to continue at Banora in the concession area held by the Dinguiraye Gold Mining Co. (DGM), which is in the northwest corner of the Siguiri Basin. DGM was owned by Kenor S.A. of Norway, France's Bureau de Recherches Géologiques et Minières (BRGM), and Middle Ea[illegible] investors. Alluvial drilling has outlined a [illegible]posit at Matagania containing about 5[illegible],000 troy ounces of gold. The pay gravel zone, which is 1.5 meters thick and underlies 7.5 meters of overburden, had an average grade of 0.096 ounce of gold per ton. BRGM's feasibility study recommended an open pit mine having a life of 5 years, based on a gold price of $434 per ounce. Vein-type mineralization was also found in the area.

Aurum Development Co. Ltd., United Kingdom, in a joint venture with the Government, was exploring the Boko gold prospects in Lower Guinea, east of Conakry.

Iron Ore.—Negotiations continued with the World Bank to fund the development of the Mifergui-Nimba iron ore deposit near the Liberia-Guinea border. Development would be by a joint-venture company that would include the Government, the Liberian iron ore production company, the Liberian-American-Swedish Minerals Co. (LAMCO), which was operating on the Liberian side of the border, and BRGM of France.

Several product tonnage scenarios have been developed that showed required facilities, capital, and operating costs for the production of from 2 to 8 million tons annually of Liberian ore and 3 to 10 million tons annually of Guinean ore for an annual total of 8 to 14.5 million tons. The project would utilize existing Liberian facilities at the Nimba Mine and at the port of Buchanan, with the railroad and new facilities to be built in Guinea. The required work force in Guinea would be about 670, which would include 62 expatriates. Construction, from the beginning of detailed engineering to startup, would take a maximum of 3 years. Capital expenditures for startup would range from $276 million to $441 million. Apparently, the preferred plan was to produce a total of 12 million tons of ore per year after an initial investment of $276 million, but an agreement was reached to limit annual production to less than 6 million tons at an initial cost of less than $100 million.

Unfortunately, financial institutions continued to doubt that the world market could absorb new iron ore production. The iron

and steel industry was producing at reduced levels as a result of declining product demand, and estimates of future iron ore requirements were very conservative. This situation, compounded by a shortage of capital and investment uncertainties in West Africa, dampened enthusiasm for financial participation in this new project. The future of the project depended on the support of the steel industry, primarily in Western Europe, in the form of long-term contracts. Both Nigeria and Romania agreed to buy considerable quantities of high-grade Nimba ore, but more contracts were needed for the World Bank to participate. Meanwhile, to complicate matters, the Liberian Government and LAMCO were negotiating at yearend 1987 over LAMCO's desire to declare bankruptcy and to close down its Liberian mining operation. LAMCO claimed that it could not continue to compete in world markets against Australian and Brazilian iron ore producers, and some European steel mills had closed.

MINERAL FUELS

During June 1987, the Government invited oil companies to bid for five large offshore blocks at promotional seminars held in Houston, TX, and London, United Kingdom. The sizes of the blocks were from 9,200 to 10,000 square kilometers and were in areas having water depths of less than 200 meters. Geophysical, drilling, and other data accumulated since 1977 by Superior Oil Co. and Buttes Resources International of the United States were made available.

[1]Physical scientist, Division of International Minerals.
[2]Mining Magazine (London). Sept. 1987, p. 213.

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